



# Taxes on Production: The Good, the Bad and the Ugly

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France stands out for its high level of taxes on production, which affect the competitiveness of companies located in its territory. These taxes weigh heavily on companies' accounts, including taxes on commercial and industrial property, a contribution to value added (VA), a turnover tax (*Taxe sur le chiffre d'affaires*, CA) and a myriad of secondary taxes.

Economic analysis shows that taxes on production are the most harmful because of the distortions they cause throughout the production chain. Unlike corporate income tax or VAT, taxes on production directly affect companies' decisions in terms of choice of production modes and prices and can therefore penalise their productivity and competitiveness. Moreover, by taxing companies at the top of the operating account, taxes on production increase their breakeven point and can explain, with other factors, the relative atrophy of the French productive sector and, in particular, of small businesses. This situation is all the more worrying since our main competitors in Europe do not make use of this type of tax, or not as much as we do. They represent 0.5% of the value added of companies in Germany and 3.6% in France, the highest level in Europe excluding Greece.

In this Note, we examine three of the most important taxes on production: the *contribution sociale de solidarité des sociétés* (C3S, corporate social solidarity contribution) on turnover, the *cotisation sur la valeur ajoutée des entreprises*

(CVAE, contribution on business value added) on business value added and the *cotisation foncière des entreprises* (CFE, business property contribution). A turnover tax such as C3S produces "cascading effects" that are transmitted and amplified throughout the production chain because at each stage of production the tax itself is taxed again. Ultimately, we show that it reduces productivity, acts as an export tax and import subsidy on intermediate goods and worsens our trade balance deficit. An empirical study based on company data conducted as part of this Note concludes that C3S reduces exports by about 1% and increases the fragility of companies in times of crisis by reducing their probability of survival. Our analysis and these new empirical results lead us to recommend as a matter of priority the elimination of C3S, whose harmfulness is unequalled in our tax system. With a view to simplifying and reducing distortions, we also recommend that the abolition of the CVAE be scheduled. Finally, we conclude that the CFE does not appear to cause major distortions. In total, the proposed tax cuts would represent 1.4 points of added value for companies and the French anomaly would be significantly reduced compared to our European competitors. This strategy of reforming and simplifying corporate taxation could be implemented in two stages: first, the abolition of the C3S, then the CVAE. We present several financing options in this Note, identifying less harmful alternative revenues.

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## Taxes on production are particularly used in France

Production taxes are much less present than the *Impôt sur les sociétés* (IS, corporate income tax) or social contributions in economic studies and public debates on tax competitiveness.<sup>1</sup> However, in total, all taxes on production in France weigh much more heavily than corporate income tax in the company accounts. In fact, they represented just over 72 billion euros in 2016,<sup>2</sup> compared to 30 billion euros for the CIT in the same year.<sup>3</sup> Similarly, cost-competitiveness studies most often focus on unit labour costs and often neglect the other production costs present in companies' operating accounts, namely taxes on production.

The first part of this *Note* aims first of all to identify and present the various taxes on production existing in France. We show that they have a relatively higher weight in France than in other European countries, thus risking to disadvantage French companies on the international scene. Indeed, economic analysis teaches us that these taxes are likely to create distortions in the production process of companies, making them as a result less numerous, less productive and less competitive.

### The main taxes on production in France

In France, there is a large number of taxes on production. These taxes paid by companies represented 3.2 percentage points of GDP in 2016. They can be classified into five categories: taxes on labour input, capital input, land, value added (VA) or turnover (table). A significant part of production taxes is based on the wage bill: this includes the wage tax which concerns sectors not subject to VAT (such as the financial sector), the transport payment which can be assimilated to an additional social contribution from the point of view of employers (whose rate is local and depends on the level of urbanisation) or the social lump sum (employer's contribution paid by the employer on remuneration not subject to social contributions). As the issue of labour levies

#### Production taxes paid by companies in billions of euros

	2016	2019
Taxes on payroll or number of employees	26.2	—
• Transport payments	7.2	—
• Payroll taxes	6.1	—
• Social package	5.2	—
• Others	7.7	—
Turnover taxes (C3S)	3.6	3.8
Value added taxes (CVAE)	13.3	14.0
Property Taxes	24.6	—
• Tax on built property	12.1	—
• <i>Contribution foncière sur les entreprises</i> (CFE)	6.5	—
• Others	6.0	—
Other taxes on production	4.5	—
Total	72.1	—

*Reading:* These taxes correspond to category D29 of the national accounts.

*Sources:* Conseil national de l'industrie (CNI) (2018): *La fiscalité de production*, CNI Report, April, PLF and PLFSS 2019.

has been largely addressed by a recent *CAE Note*,<sup>4</sup> it will not be addressed again here. The same will apply to withdrawals from fixed capital, which are now very specific<sup>5</sup> and now occupy a marginal position.

This *Note* therefore focuses on three categories of production tax bases: the turnover, the VA and the land, which correspond mainly to three taxes: the corporate social solidarity contribution (C3S), the contribution on the VA of companies (CVAE) and the land tax of companies (CFE).<sup>6</sup>

The CVAE and the CFE constitute the main part of the *contribution économique territoriale* (CET, territorial economic contribution), created in 2010 as part of the reform of *the*

The authors would like to thank Clément Carbonnier and Étienne Fize, respectively Scientific Advisor and Economist of the CAE, who followed up on this work. They also thank Camille Urvoy, Research Assistant at the CAE, for her important quantitative analysis of company data and Claire Lelarge who kindly shared her forthcoming work on the price effects of taxes on production. Finally, they thank DGFIP and ACOSS for their assistance in accessing the data used for the analyses.

<sup>1</sup> It should be noted, however, that the *Conseil national de l'industrie* (CNI, National Industry Council) recently published a report on the subject: CNI (2018): *La fiscalité de production*, CNI Report, April.

<sup>2</sup> This amount corresponds to all other taxes on production paid by non-financial corporations and financial corporations.

<sup>3</sup> See FDP 2018, evaluation of ways and means. Gross corporate income tax revenues are estimated at €56.6 billion in 2016, from which deductions and refunds are to be deducted, nearly €26.6 billion (notably for the research tax credit, RTC and the competitiveness and employment tax credit, CICE), or €30 billion of net corporate income tax revenues.

<sup>4</sup> Horthy Y., Ph. Martin and Th. Mayer (2019): "The French Policy of Payroll Tax Reductions", *Note du CAE*, no 49, January.

<sup>5</sup> Mainly flat-rate taxation on network companies: the equipments taxed are electricity generation installations, electrical transformers, radio stations, gas installations, hydrocarbon or chemical transmission pipelines, rolling stock, main distributors in the copper local loop. Conseil des prélèvements obligatoires (CPO) (2014): *Fiscalité locale et entreprises*, May.

<sup>6</sup> We focus here on the CFE, which is a tax paid to companies, whether they own or rent their premises, which refers to the "user cost" of land and buildings, unlike the property tax that applies to owners and thus affects the return on capital.

*taxe professionnelle* (TP, business tax).<sup>7</sup> The main motivation for this reform was already to improve the competitiveness of French companies, because TP had the disadvantage of increasing the user cost of capital and, as a result, limiting investment. This reform, as well as its consequences on corporate investment behaviour, illustrates *a contrario* the inefficiency of direct taxation of factors of production.<sup>8</sup>

The CVAE is the most important component of the CET. The rate is set at national level, but the CVAE's revenues are allocated to local authorities. Companies with a turnover of more than 500 000 euros are liable to the CVAE. Its base is the fiscal value added, which represents the company's wealth creation: it is calculated by deducting from the turnover (and certain other management products) the consumption of goods and services. The fiscal value added, as referred for the CVAE, differs from the balancing item of the production account:<sup>9</sup> it is calculated in such a way as to capture as accurately as possible the wealth produced by companies in the course of their operating activity. In addition to the general tax base, four specific definitions of tax bases are provided to cover specific financial activities. The CVAE rate, applied to the fiscal VA, is progressive depending on the turnover and varies from 0 to 1.5%. The scale rebates (rate of less than 1.5%) are paid by the State, so that local authorities get a much higher CVAE revenue than that actually paid by companies.<sup>10</sup>

The CFE is a tax on the use of land and not on property like property tax. For businesses, it is the equivalent of the housing tax for households. Its base is the rental value of business premises according to the administration. These values, which had not been updated since the 1970s, were updated in 2017. However, several mechanisms significantly reduce the variation in the amount payable due to this update.<sup>11</sup> Like property tax, CFE rates are set by local authorities: municipalities or inter-municipalities. The CFE raised 6.5 billion euros in 2016.

The sum of the CFE and the CVAE (the CET) is capped at 3% of the VA at the company level. Companies whose CET exceeds this ceiling may *subsequently* request the tax authorities to refund the sums paid above the ceiling. This reimbursement is paid by the State and does not affect the revenues of local authorities.<sup>12</sup>

Established in 1970, the C3S is a levy based on the turnover of companies and similar groups (sales, services, exports

outside the European Union, other non-taxable transactions and intra-community supplies). Originally, C3S was created to compensate for the loss of revenue suffered by self-employed workers' social schemes as a result of the development of wage employment. It has no equivalent among our European partners. Until 2014, companies whose annual pre-tax turnover declared to the tax authorities was less than 760,000 euros were exempt. As part of the Responsibility and Solidarity Pact, a three-stage reform of the C3S was planned: in 2015, enterprises were allowed to deduct a lump-sum allowance of 3.25 million euros from the turnover; which was then raised to 19 million euros in 2016; the total abolition planned in 2017 was however interrupted. The overall rate (C3S and its additional contribution) is set nationally at 0.16% of revenue.<sup>13</sup> In 2019, this tax is expected to generate €3.8 billion, with the top three contributing sectors accounting for two thirds of the tax's revenue: manufacturing industry, trade and finance.

More generally, the revenue from these three taxes according to the sector of activity is related to its weight in the economy, bearing in mind that the manufacturing, trade, finance, transport and specialised sectors represent about two thirds of the VA (fiscal VA within the definition of the CVAE). However, the way these three taxes are calculated (progressive rate according to turnover for the CVAE, rebates for the C3S, and variable use of land for the CFE) means that the sectors have different tax rates (Figure 1). In relation to VA, the CVAE reflects a size effect of companies by weighing less in some sectors such as agriculture or certain services, while the CFE is much more important in sectors requiring a lot of infrastructure (water and waste management, electricity and gas, transport, hotels and restaurants). Finally, the C3S, in relation to the fiscal VA, shows a higher rate in the water and waste management sector or finance.

### Taxes on production weigh more in France than in its European neighbours

International comparisons of production taxes paid by enterprises most often refer to national accounts data on the item "Other taxes on production" (D29), which includes all taxes borne by enterprises as a result of their production activities, regardless of the quantity or value of goods and services produced or sold. These taxes may be due on land, fixed assets, occupied labour or certain activities or operations.

<sup>7</sup> In the same way as the CFE and the CVAE, the flat-rate taxation of network companies was created following the abolition of the business tax (TP).

<sup>8</sup> A study on the TP reform shows that the direct taxation of companies' fixed capital restricts their investments, with a negative impact on their productivity. See Bergeaud A., C. Carbonnier, E. Jousset and C. Manguyres (2019): *Shocking Capital: Firm-Level Responses to a Large Business Tax Reform in France*, *Mimeo Banque de France*.

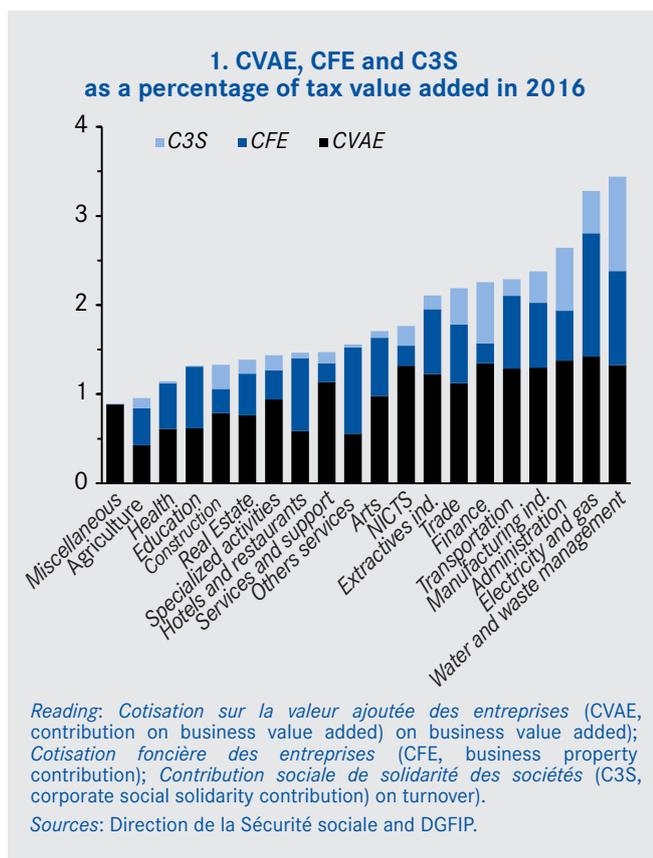
<sup>9</sup> It should be noted that the CVAE base is capped at 80% of turnover for taxpayers whose turnover is less than €7.6 million and 85% in other cases.

<sup>10</sup> The scale of CVAE rebates amounted to €4 billion in 2016.

<sup>11</sup> A mechanism for smoothing the rate, a mechanism for smoothing the base and a neutralization mechanism on the base as well.

<sup>12</sup> This set of the CET ceiling represented a tax reduction for companies of around €1.2 billion in 2016.

<sup>13</sup> Companies in certain low-margin sectors benefit from a C3S cap and the additional contribution of 3.08% of their gross margin.



In this respect, a direct comparison of this aggregate between countries may not be informative since it includes taxes on the wage bill, which are used to finance universal social benefits but which are economically close to employers' social contributions (this is the case in Sweden and Austria, for example). Moreover, international comparisons of labour costs generally include these taxes on the wage bill, adding them to employers' social contributions (for example, the wage tax in force in France is well taken into account when calculating the labour cost used to make European comparisons). For this reason, it seemed more relevant to us to make the comparison on taxes on production excluding those explicitly based on the wage bill, i.e. the scope of the taxes considered in this *Note*.

France differs from its European neighbours both in the importance of these taxes on production at 2% of GDP and 3.6% of company VA, and in their number, thus contributing to the complexity of company taxation.<sup>14</sup> In Europe, only Greece levies more (2.6% of GDP) mainly through property taxes, professional licences and a tax on polluting activities. The United Kingdom levies 1.6% of GDP *through* property taxes, with an equivalent to our CFE: *business rates*. Belgium (1.4% of GDP) has a multi-tax bases profile like France but

with a lower number of taxes, several of which are specific to the financial sector. Italy is the only country with France to have introduced a tax on VA with the local tax on productive activities (IRAP), close to our CVAE, which corresponds to the largest share of these taxes. In no European country is there a tax on turnover equivalent to the French C3S. Four of the most economically efficient European countries, Germany, Austria, the Netherlands, Sweden and Austria, levy only 0.5 to 1.5% of enterprises VA.

### What does the economic analysis say about taxes on production?

Economic theory, largely based on the seminal work of Diamond and Mirrlees (1971)<sup>15</sup>, considers that intermediate goods should never be taxed. Any tax on an exchange within the framework of a contract, whatever it may be, removes the economy from an efficient situation. Yet, some of these taxes are even more harmful than others. Diamond and Mirrlees have managed to demonstrate, and their result can be considered very robust, that taxes that stand between business exchanges are the worst. This applies in the first place to trade in intermediate goods but also to trade in capital goods, tangible or intangible. These taxes will destroy the productive efficiency of the economy, defined as no more output of any good can be achieved from the given inputs without sacrificing output of some other good. Two mechanisms are at work: a proportional tax on all input factors reduces the scale of production and a non-proportional tax reduces the production of some goods for the benefit of others. Indeed, a company seeks to optimize the proportion of each input at its disposal according to the price and productivity of each. Effective use of inputs requires that their productivity ratios be equalized at their relative cost.

### Taxes on production against productivity and competitiveness

The taxation of an input (capital or intermediate factor) raises its relative price and will lead companies to make bad choices in their production process. This distortion can thus encourage them to use other inputs that are less productive or of lower quality but less taxed. This is therefore a misallocation that can affect the productivity of the entire economy. This may seem secondary, but recent literature on productivity and its slowdown has shown that this is not the case. These distortions at the level of individual companies can be amplified at the level of the economy as a whole as a result of the spread along the chain of production, as will be discussed in more detail below in the case of C3S. Thus, Baqaee and Farhi (2017)<sup>16</sup> use a general equilibrium model to

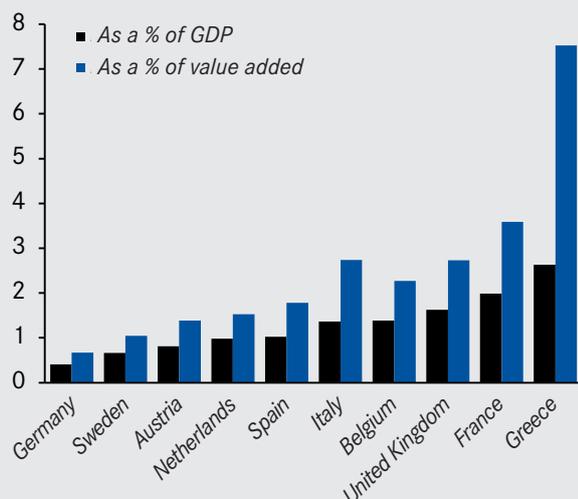
<sup>14</sup> Corporate taxation in France is also characterised by a very large number of low-yield taxes. See Wahl T. (Supervisor) (2014): "Les taxes à faible rendement", *IGF Report*, no 2013-M-095-02.

<sup>15</sup> Diamond P.A. and J.A. Mirrlees (1971): "Optimal Taxation and Public Production I-II", *American Economic Review*, vol. 61, no 3, pp. 8-27 and 261-278.

<sup>16</sup> Baqaee D.R. and E. Farhi (2017): "Productivity and Misallocation in General Equilibrium", *NBER Working Paper*, no 24007.

assess the macroeconomic impact of these poor allocations –potentially from taxes on production– at the microeconomic level. They estimate that for the US economy, the reallocation of inputs accounts for half of the increase in aggregate factor productivity between 1997 and 2015, as much as technological progress. Introducing distortions in the choice of factors of production and intermediate consumption is therefore not a minor issue.

## 2. Production taxes paid by companies in 2016



*Reading:* Heading D29 of the national accounts, excluding taxes on the wage bill paid by non-financial corporations and financial corporations.  
*Sources:* Eurostat and authors calculation.

Among the taxes on production, some tax transactions between companies and households. This is the case for labour services (e.g. wage tax), or land services (CFE if the owner of the land or building used for productive purposes is a household). The degree of harmfulness of these taxes is less important than taxes on the exchange of factors between companies. This second part of Diamond and Mirrlees' result led us to exclude taxes on the wage bill from the scope of the study. A caveat, however, is that the result of Diamond and Mirrlees assumes full use of the factors of production.<sup>17</sup> We keep this condition in mind when formulating our proposals.

Finally, the same authors indicate that it is necessary to prohibit the taxation of trade between the domestic and foreign productive sectors. Indeed, the degree of harmfulness

is comparable to taxing trade within the domestic productive sector. With the C3S, our country has achieved the feat of imposing a customs duty on its own production, as we detail in this *Note* (see *below*). A company that incurs a tax on a factor used in its production process sees its costs increase. It may decide to defer this additional cost in different ways, either by reducing other costs (e.g. salaries) or, for example, by increasing its selling price. In the latter case, this undermines the company's price competitiveness, both in exports and on the domestic market. From this point of view, taxes on production also act as an export tax. In addition, companies needing to purchase intermediate goods and services are encouraged to source their supplies abroad rather than in France, because of this impact on prices.

### Rather tax final goods and final income

In contrast to input taxation, the optimal taxation literature recommends taxing only final goods, so as not to introduce distortions into companies' production decisions. This form of taxation is the one operated by VAT. It is always the same very powerful result of Diamond and Mirrlees that inspires economists here. It is better to tax transactions between companies and households than to tax transactions between companies. This certainly distorts consumer choices, but it is a lesser evil compared to distorting producer choice.

The taxation of profits as operated by the corporate income tax (CIT) is generally considered –in terms of efficiency– to be a better tax than taxes on production. It does not increase, unlike taxes on production, the company's breakeven point and thus has less impact on the probability of survival of companies. It does not lead, at least directly, to an increase in production costs and prices and thus to a deterioration in competitiveness. However, competitiveness can also be affected by the CIT through its negative impact on innovation and investment. In addition, the CIT reduces the attractiveness of France as a production site. Finally, the taxation of corporate profits is particularly exposed to tax optimisation practices, exploiting differences or inconsistencies between different tax jurisdictions, aimed at artificially transferring profits to countries where they are taxed at a lower rate, thereby eroding the tax base. This problem is not unique to France. The growth of multinational companies and the development of the digitalisation of the economy invite us to explore ways of reforming corporate taxation so as to be better adapted to this context and to limit the possibilities of profit relocation. This subject will be the subject of a future *CAE Note*.

<sup>17</sup> Another condition is that superprofits (beyond a normal return on capital and risk) must be taxed. This can provide a basis for corporate income tax.

## Focus on three taxes on production: CFE, C3S and CVAE

### The corporate property contribution (CFE): a low-distortive tax?

#### Who pays the CFE: the owners or users of the buildings?

The CFE is based on the rental value of buildings used by companies. It taxes the use of the real estate factor, unlike the property tax that taxes real estate property. Although it is the occupying companies that pay this tax, the economic analysis has shown that it is not systematically the entity subject to the tax that suffers the burden. Thus, if the supply of commercial property is less responsive to changes in rents (supply is inelastic) than demand, then the tax will weigh on owners, and on user companies if it is not.

To our knowledge, there is no empirical estimate of the impact of taxation on commercial real estate in our country. Several analyses on residential real estate show that housing subsidies are in fact at least partly to the benefit of landlords and not tenants.<sup>18</sup> Assuming that these empirical results could be transposed to the CFE despite the differences (commercial and industrial real estate and non-residential sector, on the one hand, and tax and non-subsidy, on the other), the CFE could have relatively little impact on taxable companies.

#### Does CFE influence corporate behaviour?

Faced with CFE, companies could choose technologies that require less real estate, but that are potentially less productive. However, we find no empirical evidence on this subject. On the one hand, an econometric analysis based on company data<sup>19</sup> reveals a weak negative relationship between the CFE rate and fixed assets such as land and buildings for companies in the manufacturing sector. On the other hand, no significant statistical link is detected between the CFE rate and rental expenses. Moreover, since real estate is necessary for the installation of machinery and personnel, a lower consumption of this factor could change the company's production process. However, there is no link between the CFE rate and machinery equipment or employment, so that

the production process of companies seems to be relatively unaffected by the CFE. Finally, companies could pass on the cost of the CFE to their selling prices. Yet, no statistical link emerges between the tax and the turnover or exports, whether focusing on all firms or restricting the sample to the manufacturing sector. The CFE therefore does not seem to cause any major distortions on the production of French companies or affect their sales.

It is also possible that companies may substitute between the potential territories where companies are located. Rathelot and Sillard (2008a)<sup>20</sup> analysed the impact of TP – a significant part of which was the rental value base of the property used, such as the current CFE – and showed that if company relocations existed, they were very low. Continuing their study for greater tax impacts (free zones allow exemption from local taxes, but also corporate income tax and social security contributions), it was shown that these relocations were geographically close or even within the same municipality,<sup>21</sup> without any major effect on the overall number of establishments.<sup>22</sup> In addition, another study on Switzerland indicates that these effects decrease with agglomeration economies,<sup>23</sup> with companies in metropolitan areas being less highly responsive in terms of location. It therefore seems that companies' behavioural responses to this tax are limited, generating few economic distortions.

#### A tax to encourage local authorities to reserve land for businesses

In addition, the CFE, which provides revenues for municipalities and inter-municipalities, can be seen as a subsidy to encourage them to free up land for companies. Indeed, in their urban planning decisions, local authorities may wish to limit professional real estate, whose beneficial effects in terms of employment and activity are shared with the employment area, whereas it may present negative externalities in the immediate surroundings of the place where the company is located. The taxation of this property makes it possible to internalize at the level of the decision-maker of local urban planning the benefit generated by the creation of business parks. In addition, it gives municipalities room for manoeuvre. For these various reasons, we do not recommend a major reform of the CFE at this stage.

<sup>18</sup> Fack G. (2006): "Are Housing Benefits an Effective Way to Redistribute Income? Evidence From a Natural Experiment in France", *Labour Economics*, vol. 13, no 6. Grislain-Letrémy C. and C. Trevien (2014): "The Impact of Housing Subsidies on the Rental Sector: The French Example", *INSEE Working Paper*, no G 2014/08.

<sup>19</sup> See Urvoy C. (2019): "Examen de trois impôts sur la production : CVAE, CFE et C3S", *Focus du CAE*, no 35-2019, June.

<sup>20</sup> Rathelot R. and P. Sillard (2008a): "The Importance of Local Corporate Taxes in Business Location Decisions: Evidence From French Micro Data", *The Economic Journal*, vol. 118, no 527, pp. 499-514.

<sup>21</sup> Mayer Th., F. Mayneris and L. Py (2015): "The Impact of Urban Enterprise Zones on Establishment Location Decisions and Labor Market Outcomes: Evidence from France", *Journal of Economic Geography*, vol. 17, no 4, pp. 709-752.

<sup>22</sup> Rathelot R. and P. Sillard (2008b): "Zones franches urbaines : quels effets sur l'emploi salarié et les créations d'établissements ?", *Économie et Statistique*, no 416-415, pp. 81-99.

<sup>23</sup> Brülhart M., M. Jametti and K. Schmidheiny (2012): "Do Agglomeration Economies Reduce the Sensitivity of Firm Location to Tax Differentials?", *The Economic Journal*, vol. 122, no 563, pp. 1069-1093.

## The Corporate Social Solidarity Contribution (C3S): eliminating the most harmful as a priority

The turnover taxation has existed since the 13<sup>th</sup> century but began to become significant in Europe (especially in France and Germany) after the First World War. These taxes have been replaced in most countries<sup>24</sup> by French-inspired VAT, considered as the least distortive of taxes since the 1960s. The paradox is therefore that France, the inventor of VAT, was the only industrialized country to simultaneously reintroduce a tax on turnover with the creation of the C3S in 1970. This tax “succeeds” in negatively impacting both the productivity and competitiveness of companies:

### A tax on the tax and other “cascading effects”

With a turnover tax, each good produced is taxed again if it enters the production process of another company: in this sense, C3S acts at each stage of production as a tax on the tax. Companies pass on the tax at least partially to their customers by increasing their prices: among these customers are companies that buy intermediate consumption necessary for their production, and which must therefore not only pay the tax, but also bear the increase in their production costs caused by the price increases of previous production stages. The latter companies therefore also tend to reflect both taxes and increases in production costs in their prices. This mechanism creates a “cascading effect” that particularly affects the prices of products at the end of the production chain, whose production requires many steps. Firms producing in France are therefore likely to be disadvantaged compared to their international competitors. In addition to encouraging vertical integration, the tax also encourages companies to review their procurement strategies by switching to untaxed foreign suppliers (or encouraging their suppliers to relocate), which allows them to reduce the impact of C3S on their competitiveness.

The importance of “cascading effects” is largely determined by the degree and nature of competition in the different markets. A company facing a very high level of competition in its end market will not be able to pass through taxes to price increases, which will tend to limit the cascading effect on downstream sectors. However, if this company no longer generates a profit, it may be forced to cease its activities. The mechanism acts symmetrically on the input market: a company with little bargaining power with its suppliers will be forced to accept price increases.

An exercise to quantify the price effect of the C3S was carried out (box): it reveals that in all sectors, the price effects are higher than the effective tax rate because of the cascading effect, which amplifies the harmful effects of the tax throughout the production chain. In the industry, the price increase is about twice the effective tax rate, or about 0.19%. This price effect induced by the C3S could only be even more significant before 2015 and the introduction of successive lump-sum allowances for the calculation of this tax. The fact that the C3S currently only directly affects companies with a turnover above €19 million does not mean that SMEs are not indirectly affected by *the* cascading effect. This is all the more the case when they buy intermediate goods from large companies (paying C3S) which can more easily pass through the tax to their prices.

It could be argued that, even if the multiplier effect of C3S is proven, the total impact should not be too high, as the tax rate is low. We shouldn't be deluded by this argument. In a sector such as mass market retailing, margins are low and a price difference of around 0.3 to 0.5% is already very significant, which encourages distributors to develop their own brands or to use imports to escape the multiplying effect of the C3S.

### C3S against business productivity, competitiveness and firm survival

When the production process requires the use of intermediate goods, it is therefore in the interest of companies to replace their purchases from other companies with internal production, even if this choice is not optimal in terms of productivity. A turnover tax therefore encourages companies to integrate vertically in order to limit additional production costs but at the expense of the productivity of the economy as a whole:<sup>25</sup> companies do not optimise the use of factors and production methods, which makes them less efficient. Using the multi-sector model taking into account the input-output structure of Osotimehin and Popov (2019),<sup>26</sup> a rough estimate of the productivity loss due to the misallocation of production factors due to the C3S was made. The resulting permanent loss of productivity is about 0.01 to 0.02%. Taking into account the impact of lower productivity on capital accumulation, the loss of GDP is about 0.016 to 0.032%, or about 360 to 720 million euros. The cost may seem low, but it is related to a tax that brings in 3.8 billion euros, i.e. a dry loss for the economy of 10 to 20% of tax revenue, when considering productivity only.

<sup>24</sup> With the notable exception of the United States, which has always opposed the introduction of VAT.

<sup>25</sup> On the impact of input costs on the incentive for vertical integration, see, Alfaro L., P. Conconi, H. Fadinger and A.F. Newaman (2016): “Do Prices Determine Vertical Integration?”, *Review of Economic Studies*, vol. 83, no 3, or Berlingieri G., F. Pisch and C. Steinwender (2018): “Organizing Global Supply Chains: Input Cost Shares and Vertical Integration”, *NBER Working Paper*, no 25286. See also Hansen B., K. Miller and C. Weber (2017): “The Taxation of Recreational Marijuana: Evidence from Washington State”, *NBER Working Paper*, no 23632.

<sup>26</sup> Osotimehin S. and L. Popov (2019): *Misallocation and Intersectoral Linkages*, forthcoming. We would like to thank Sophie Osotimehin for using her model to estimate the impact of C3S on productivity.

## Estimation of the “cascading effect” on the prices of the C3S

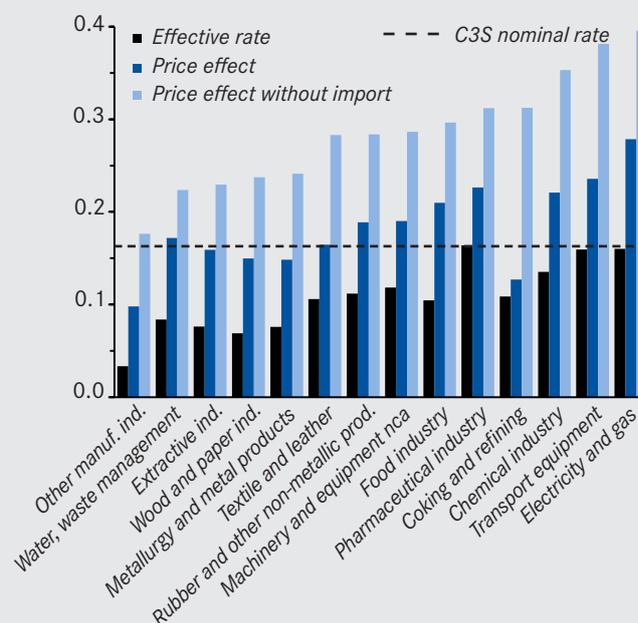
This box is based on a study by Claire Lelarge that quantifies the mechanism of price amplification by “cascading effect” of the *Taxe sur le chiffre d'affaires* (turnover tax) such as *contribution sociale de solidarité des sociétés* (C3S, corporate social solidarity contribution).<sup>a</sup> The analytical framework corresponds to a situation in which all companies operate in monopoly competitive markets and are able to pass through taxes and increases in production costs to their customers (the impact of taxes is fully borne by the buyer, whether a company or a final consumer). The quantification exercise is calibrated on the national accounts branch data for the year 2016, in particular the Input-Output table describing the intersectoral relationships of the economy.<sup>b</sup> This makes it possible to take into account the cascading effects by integrating into the analysis the production chains of the French economy. We obtain the cumulative impact of C3S on prices in the French industrial sectors (graph).

Several lessons can be drawn from this quantification exercise. First, recent changes in the tax scale, in particular the reduction in the tax base to 19 million euros of turnover since 2016, have led to a reduction in the effective tax rate well below the nominal rate of 0.16% in most sectors of activity. For the industrial sectors, only the energy, transport equipment (including automotive) and pharmaceutical sectors bear tax rates close to 0.16% because the companies operating there are very large. For manufacturing industry as a whole, the effective rate of C3S is estimated at 0.11%.

In all sectors, price effects are higher than the effective tax rate due to the cascading effect: the ratio between the two quantities is often close to 2 but varies from 1.2 to nearly 3 depending on the sector of activity and its inclusion in the input-output matrix of the French economy. In 2016, the average price effect in manufacturing industry was estimated at 0.19%. This price effect induced by the C3S was naturally even greater before the increase in the amount of the reduction on turnover for each company.

Sectors whose companies source their supplies largely from international markets have lower price effects. This is a direct consequence of the incentive to import intermediate goods described above. This is particularly the case in the coking and refining sectors. Conversely,

Estimated price effects generated by C3S in the industrial sector, in %



Sources: National Accounts (INSEE) and Lelarge C. (2019): “Quantifying the Price and Competitive Effects of Corporate Taxes”, *CEPR Working Paper*, forthcoming

other manufacturing industries, or the water and waste management sector, import fewer intermediate goods or services and are not able to limit the impact of the tax by increasing their imports. This is illustrated by comparing the total price effect of C3S in different sectors in the current situation with a hypothetical situation in which companies could not import their intermediate consumption: the difference between these two estimates roughly indicates the incentive given to each sector to import these intermediate goods (graph). Naturally, this illustration makes little sense when a large proportion of imported intermediate goods cannot be produced in France (as in the case of the extractive industries sector, for example), but it provides interesting insights in the other case, i.e. when domestic producers of intermediate goods and services for companies compete with foreign companies and suffer in a way from a “negative customs duty” *via* the C3S.

<sup>a</sup> See Lelarge C. (2019): “Quantifying the Price and Competitive Effects of Corporate Taxes”, *CEPR Working Paper*, forthcoming. The quantification framework was initially proposed by Caliendo L. and F. Parro (2015): “Estimates of the Trade and Welfare Effects of NAFTA”, *Review of Economic Studies*, vol. 82, no 1 and Blaum J., C. Lelarge and M. Peters (2018): “The Gains from Input Trade with Heterogeneous Importers”, *American Economic Journal: Macroeconomics*, vol. 10, no 4.

<sup>b</sup> This analysis would ideally require a sectoral EIR (intermediate input table), or even at the “firm” level in order to describe as accurately as possible the intermediate *input* flows between taxed units. However, this information is not available for the French economy, so the study is based here on information at the branch level, without being able to say very precisely to what extent this approximation has an impact on quantifications. Information at company level is only available for the Belgian economy because of its VAT collection method, see Dhyne E., G. Magerman and S. Rubínová (2015): “The Belgian Production Network 2002–2012”, *NBB Working Paper Research*, no 288.

The second problematic aspect of C3S is that it reduces the competitiveness of companies acting as an export tax and import subsidy. No other tax succeeds in this “feat”. Indeed, it is not limited to taxing turnover for final consumers, it is not deductible on export. The impact on production costs is reinforced by the cascading effect, especially since the production chain is long, involving successively several intermediate companies in the production process. From the quantification of the price effect of C3S, we can estimate the impact on French exports and imports. With a price effect of 0.19% for the manufacturing sector alone, and using an elasticity of exports at prices of about 5,<sup>27</sup> we come to the conclusion that French exports could increase by just under 1% in the absence of C3S, or about €4.2 billion. As for manufacturing imports of intermediate goods, estimates from Claire Lelarge’s work suggest that C3S increases them by about 500 million euros. The manufacturing trade balance (deficit of 33 billion euros in 2018) would therefore be reduced by about 14% thanks to the elimination of the C3S. This figure, which is the result of a theoretical *ex ante* estimate, is certainly an upper bound and must be taken with caution, but it suggests that the effects of C3S on the competitiveness of the manufacturing sector are far from negligible.

We also empirically estimated the effect of C3S on exports using very detailed data from nearly 80,000 manufacturing companies over the period 2011-2016.<sup>28</sup> To do so, we compare companies that have benefited from the elimination (in 2015 for companies with a turnover of 3.25 million euros lower and in 2016 for companies with a turnover of less than 19 million euros) or a reduction in the effective rate of C3S (due to successive deductions from the same thresholds in 2015 and 2016 with those that have not benefited or less). The estimated coefficient of the negative impact of C3S on exports is quite stable and statistically very significant in the various estimations that have been made.<sup>29</sup> Thus, the companies that benefited from the elimination of C3S successively in 2015 and 2016 saw their exports increase by about 1% more than those that did not. This effect is quantitatively important and above all consistent with the price elasticity of exports reported in the literature (see above). The positive effect on exports occurs quickly, suggesting that companies have incorporated the cost reduction induced by the elimination of C3S into their prices. This study is still preliminary but it suggests that C3S does act as a tax on French exports.

Since C3S taxes companies at the top of the operating account, it increases the break-even point necessary for the company’s survival.<sup>30</sup> With the same identification strategy, we compared the probability of survival of companies just below and above the threshold before and after the reform. We find that the probability of a company disappearing within two years has been significantly increased due to C3S, especially in 2009, from around 9% to 10%.<sup>31</sup> This weakening of companies exists but less strongly in the years after the crisis. These results suggest that taxing turnover can negatively affect the probability of survival of companies, especially in times of crisis.

### Completely remove the C3S

We therefore consider that the C3S is nowadays the most harmful tax for companies. The removal of C3S in three stages was planned as part of the Responsibility Pact. While the first two stages were carried out in 2015 and 2016, leading to the current scale of 0.16% of annual turnover exceeding 19 million euros, the final abolition planned for 2017 did not take place. We propose to complete the reform and abolish this tax completely. The consequence of starting the phasing out of C3S gradually, starting with rebates, and thus completely eliminating the tax for companies with low turnover (excluding indirect effects passed on by companies that are still subject to it), is that the last phase of phasing out would directly benefit large SMEs, mid-cap companies or large companies. This should not be an obstacle to this abolition. Indeed, the cascading effects generated by the C3S mean that this tax spreads to the entire productive fabric, including small SMEs that are not liable for this tax. Smaller companies are all the more likely to bear the weight of C3S if they import little and face suppliers or service providers with greater market power (e.g. financial sector): in the end, all companies, regardless of their size, will benefit from the complete abolition of C3S.

In view of the severe constraints on our public finances, the implementation of this reform can be combined with another recommendation set out in a previous *CAE Note* which proposed to review contribution relief for higher salaries, targeting in particular the extension of the 1.8 point reduction in the *Pacte de responsabilité* (Responsibility Pact) in 2016 (PR16)<sup>32</sup> from 1.6 to 3.5 SMIC. The C3S now generates €3.8 billion (PLFSS 2019) while the PR16 costs between €4 and €4.5 billion: the PR16 could be reconfigured in such a way

<sup>27</sup> This elasticity is common in international trade literature. See, for example, Fontagné L., Ph. Martin and G. Orefice (2018): “The International Elasticity Puzzle Is Worse Than You Think”, *Journal of International Economics*, no 115, pp. 115-129.

<sup>28</sup> See Urvoy (2019) *op. cit.*

<sup>29</sup> The coefficient indicates that a 1 percentage point increase in the C3S rate is associated with a decrease in exports of about 6%. These estimates include fixed “year-sector” effects to take into account possible sectoral trends and the company’s value added, fixed assets and employment are added in control.

<sup>30</sup> It should be noted that 20% of the companies that owe C3S are not profitable.

<sup>31</sup> See Urvoy (2019) *op. cit.*

<sup>32</sup> L’Horty, Martin and Mayer (2019) *op. cit.*

that the impact of the abolition of the C3S is neutral overall on public finances and for companies. Such a reform would make winners and losers in apparent terms, i.e. assuming that prices do not adjust to the new tax structure. However, we believe that all companies, regardless of their size and sector of activity, would benefit in terms of efficiency and lower input costs if we take into account the tax incidence phenomena: the impact of the abolition of C3S would spread to the entire productive sector by lowering input prices through inter-company trade. The advantage for large companies would be partly offset by the reduction in social security contributions, which would result in an increase in the cost of skilled labour. The reduction in social security contributions is interpreted as a reduction in a tax on trade between companies and households. It is justified in cases of clear underemployment of the labour force which is not proven for skilled work (the unemployment rate for professionals is 3.8%). To this extent, the result of Diamond and Mirrlees (1971, *op. cit.*), which assumes full use of the factors of production, then retains its full force, and we propose, therefore, to substitute a tax on trade within the productive bloc by a tax on trade between households and companies. Another approach in line with the fact that the least distorting taxes concern end-users would be to remove certain VAT tax loopholes such as VAT in the catering industry.<sup>33</sup> The increase in VAT rates is often criticised because of its anti-redistributive aspects, but as highlighted by a report by the *Conseil des prélèvements obligatoires*,<sup>34</sup> this is not the case for catering, which weighs more heavily on the budgets of wealthier households.

**Recommendation 1. Finalise the abolition of the corporate social solidarity contribution (C3S), which was interrupted in 2017.**

**Contribution on the added value of companies**

By relying on an balancing item of the production account such as VA –i.e. the production sold or stored less the purchases of goods and services from suppliers that were necessary for this production– a company’s VA contribution has a double advantage at first glance compared to other taxes on production. First, it is based on a neutral base with regard to the combination of the company’s inputs, unlike a wage bill base that penalises labour-intensive companies or a

tax on equipment and movable property that weighs on those that are capital intensive. Secondly, because of the deduction of intermediate consumption, it should not suffer from the cascading effect unlike a tax on turnover (*see above*). This tax also has the advantage of being neutral as to the source of financing for investments (equity or debt), unlike the corporate income tax, which has a bias in favour of debt.<sup>35</sup>

**A less neutral tax than it seems**

However, the fact that the rate applicable on VA is progressive according to the turnover, makes this tax *de facto* dependent on the turnover which exposes it to distorting effects, even if these effects are more complex and certainly less strong than those identified with the C3S. We can illustrate the distortions potentially generated by the great heterogeneity of the CVAEs actually paid as a function of the VA. For example, for companies in the 9<sup>th</sup> decile of VA, 25% of companies have a rate below 0.7%, and 25% a rate above 1.4%.<sup>36</sup> Thus, at similar VA, the CVAE rate can be doubled. This heterogeneity results from the way in which the tax is calculated without deliberate action by the public authorities. It should also be noted that the methods used to calculate the CVAE have paved the way for tax optimization strategies and, consequently, for distortions, particularly because of the complexity of the legal concept of tax VA. For all these reasons, it would be simpler, more efficient and in accordance with the very principle of this tax, either to apply only a single rate or to introduce a progressive scale based on VA and not on turnover.

A simple adjustment of the rules for calculating the CVAE would go in the right direction but would not solve the problem of input taxation insofar as the CVAE is based on gross VA: intermediate purchases are indeed deducted from the taxable base but this is not the case for other purchases from suppliers of capital goods. This again exposes taxable companies to the risk of cascading taxation, which could encourage them to produce their own capital (e.g. a patent) rather than buying it from another company. Above all, the CVAE has the major disadvantage of having as its base an operating balance well in advance of the company’s net income, unrelated to its profitability. It can be assimilated to two taxes applying, with the same rate, on the one hand, to the wage bill and, on the other hand, to the gross operating surplus (EBITDA). By taxing EBITDA and therefore depreciation,<sup>37</sup> this tax directly affects companies’ investment capacities, much

<sup>33</sup> On VAT on catering, see Benzarti Y. and D. Carloni (2018): “Qui a bénéficié de la baisse de la TVA sur la restauration en 2009 ?”, *IPP Note*, no 32; Trannoy A. (2018): *Étude sur une aide aux entreprises : les taux réduits de TVA, notamment dans la restauration*, Report for the French National Assembly under the 2019 Finance Act, AMSE Document Eco dialogue.

<sup>34</sup> Boutchenik B. (2015): *La taxe sur la valeur ajoutée : les effets redistributifs de la taxe sur la valeur ajoutée*, Conseil des prélèvements obligatoires, Report no 2, April.

<sup>35</sup> However, this argument must be put into perspective since the adoption of a general rule limiting the deductibility of financial charges to 30% of earnings before taxes, interest, provisions and depreciation (EBITDA) or to €3 million if this amount is higher, in the context of France’s transposition of the ATAD Directive (Finance Act 2019).

<sup>36</sup> See Urvoy (2019) *op. cit.*

<sup>37</sup> The CVAE relates to gross VA and not net of the depreciation of fixed capital, unlike the Italian IRAP.

more so than corporate income tax. Indeed, with the CVAE, companies cannot deduct from the taxable base expenses economically linked to production (consumption of fixed capital), which penalises in particular those who need to renew their production equipment regularly. The CVAE thus leads to distorting the profitability of investments according to sectors by concentrating its impact on the most capital-intensive sectors. Finally, the CVAE carries the risk of distorting companies' productive allocation choices to the detriment of capital, with a negative effect on productivity. Our reasoning is always based on the same theoretical basis. The CVAE taxes two thirds of the labour factor and one third of the capital factor. In a situation of full employment –which seems to be the case for skilled jobs– taxation of the capital factor that taxes trade within the productive bloc is more harmful than taxation of the labour factor.

### Schedule the deletion of the CVAE

The abolition of the CVAE, without being replaced by a new tax, would have two main advantages: the elimination of the distortions described above and a major simplification of company taxation since companies would no longer have a specific declaration to pay the CVAE. This declaration is, as a matter of fact, far from simple for companies (many exemptions, rebates...). Another important advantage is that the abolition of the CVAE, more than a further reduction in the corporate tax rate beyond those already planned by 2022, would benefit to a large proportion of companies, both profitable and distressed, as well as companies in the expansion phase which, for example, invest heavily but still make little profit. We are aware of the negative impact of profit taxation on investment and innovation in particular as demonstrated by recent empirical studies, but we consider it preferable to shift taxes on production –especially when they affect EBITDA– to profits. We also have in mind the importance of the nominal CIT rate on the attractiveness of France. However, this point must be put into perspective: while the corporate income tax is the most well-known tax, investors are not unaware of the existence of other taxes weighing on companies in France, duly listed by most consulting firms.<sup>38</sup>

Naturally, the abolition of the CVAE implies finding alternative revenues for local authorities. To this end, we are not advocating the creation of a new local business tax. While

land can constitute a good territorialized base for a local tax, taxes on production are to be prohibited and corporate income tax –which is very sensitive to changes in the economic cycle–<sup>39</sup> generates revenues that would be far too volatile for local authorities. It should be noted here that the instability of CVAE's revenues is already regularly pointed out by local elected officials, an instability that is very much due to the territorialized nature of the base. At this stage of the reasoning, it seems to us that two subjects of a different nature must in fact be decoupled: on the one hand, the reform of company taxation (and its financing) and, on the other hand, the distribution of tax revenues to local authorities.

To allocate substitute revenues for local authorities deprived of CVAE, we recommend allocating a fraction of a national tax such as VAT, much less volatile than the CIT, with the same distribution key as for CVAE (two-thirds of the establishments' staff and one-third of the land) but calculated in an aggregated manner at the municipal or intermunicipal level and no longer undertaken by company. With such a distribution method, local authorities would not be directly interested in the results of companies (or as currently in the VA produced by companies present on its territory) but a link with economic activity would be maintained, insofar as the arrival or departure of a company, or the fact that it hires or dismisses, would have an impact on the product actually received.

**Recommendation 2.** Schedule the abolition of the contribution on the added value of companies (CVAE) and, in return, the allocation to local authorities of a fraction of national tax with the same distribution key (employment and local land) calculated at the level of the beneficiary local authorities.

What avenues should be considered if the State's financial margins are not sufficient to support the impact of the abolition of the CVAE? First, it should be pointed out that the disappearance of this tax would increase the tax base of the corporate income tax by the same amount and, assuming an average rate of around 20%, this would represent a return of CIT of €2.6 billion.<sup>40</sup> Second, the best guide to

<sup>38</sup> See, for example, Roche & Cie (2019): *Investing in France: Business Taxation 2018-2019*. Available on [www.cabinet-roche.com/documents/Guide-on-business-taxation-in-France.pdf](http://www.cabinet-roche.com/documents/Guide-on-business-taxation-in-France.pdf); Deloitte (2019): *International Tax. France Highlights 2019*. Available on [www2.deloitte.com/content/dam/Deloitte/global/Documents/Tax/dttl-tax-francehighlights-2019.pdf](http://www2.deloitte.com/content/dam/Deloitte/global/Documents/Tax/dttl-tax-francehighlights-2019.pdf); HSBC Bank France Company Limited and PricewaterhouseCoopers (2012): *Doing Business in France*, 3<sup>rd</sup> edition, October. Available on [www.pwc.de/de/internationale-maerkte/assets/doing-business-in-france.pdf](http://www.pwc.de/de/internationale-maerkte/assets/doing-business-in-france.pdf)

<sup>39</sup> While the elasticity of a tax based on VA to GDP is unitary, the elasticity of the IS to GDP is about 3. See, for example, Lafféter Q. and M. Pak (2015): "Élasticités des recettes fiscales au cycle économique : étude de trois impôts sur la période 1979-2013 en France", *INSEE Working Paper*, no G2015/08.

<sup>40</sup> The CVAE must generate 14 billion euros in tax revenue in 2019, minus 1 billion euros in refunds to companies linked to the CET cap. It thus represents 13 billion euros in expenses deductible from the tax base. The abolition of the CVAE would increase the tax base by the same amount and, assuming an average rate of around 20%, would represent a tax return of €2.6 billion, see Urvoy (2019) *op. cit.*

increasing revenues is to use the hierarchy of taxes that can be established by focusing on the least harmful sources of financing. The most neutral and therefore least negative tax on business productivity is VAT. However, in the current context, financing the abolition of a tax on businesses (without prejudging the impact of the CVAE on consumer prices) through an increase in a tax directly imposed on the final consumer seems difficult, especially since it is also important to control the redistributive aspects of such an operation. However, the current differentiation of VAT rates is not optimal and should encourage the questioning of certain inefficient tax loopholes (e.g. catering). With regard to the taxation of labour input, the charges on skilled labour are the least harmful because it is in a situation of full employment. In this respect, if the negative assessments of the effects of reductions in social security contributions above 1.6 SMIC were to be confirmed, both on employment and competitiveness, budgetary room for manoeuvre could be created by refocusing the reductions in social security contributions resulting from the switchover of the CICE on low wages, in a degressive manner in order to avoid any threshold effect. Finally, an increase in CIT revenues

could be achieved by broadening the base, in particular by more effective taxation of multinationals (a subject on which international negotiations are starting within the OECD framework and on which the CAE will soon make proposals) and by reducing the various tax loopholes.

Our proposals are based on the observation that taxes on production are among the most harmful taxes to productivity and competitiveness. The elimination of the C3S must be the priority because of its particularly harmful “cascading effect”. Next, the removal of the CVAE must be programmed. These proposals are also based on a simple strategy: eliminating the most harmful taxes on companies, and financing this movement by reducing the least effective tax expenditures and taxing corporate profits less distortingly. Beyond the gains in productivity and competitiveness that we expect from such a reform, it would also help to reverse a trend that is deeply rooted in our country, which consists in giving with one hand and taking away with the other. ●



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